

Appl. No. : **10/619,796**
Filed : **July 15, 2003**

REMARKS

The foregoing amendments are responsive to the Office Action dated October 8, 2008. Applicant respectfully requests reconsideration of the present application in view of the foregoing amendments and the following remarks.

Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Clarification:

The specification states on Page 8, Lines 19-20, "The terms "sources" and "physical sources" are used herein to include all types of actual and/or fictitious sources." This language was not intended to broaden the term "physical sources" to include sources other than those known to produce a physical effect.

The specification gives several examples of the types of intended "physical sources" included within this definition. One example is given on Page 8, lines 4-11.

"Sometimes it is convenient to consider disturbances as being created by an equivalent source (e.g., a fictitious source) rather than a real physical source. For example, positive and negative charges nearly exactly cancel each other out. It is customary to perform calculations using a fictitious charge, which is the net difference between the positive and negative charge, averaged over the region of space. This fictitious charge usually cannot be identified with any specific positive or negative particle."

Another example of a fictitious source is given on Page 8 Lines 12-17.

"A magnetic current is another example of a fictitious source that is often used. It is generally assumed that magnetic monopoles and magnetic currents do not exist (while electric monopoles and electric currents do exist). Nevertheless, it is known how to mathematically relate electric currents to equivalent magnetic currents to produce the same electromagnetic waves. The use of magnetic sources is widely accepted, and has proven very useful for certain types of calculations."

The Specification gives an example of an embodiment(s) of the invention on Page 25 Line 8 through Page 32 Line 26 and in Figure 10. This embodiment(s) uses this invention in conjunction with the well known computer program NEC2. NEC2 computes how an electromagnetic wave incident on a surface produces a scattered electromagnetic wave.

It is known that an incident electromagnetic wave causes electric (not magnetic) currents to flow on a surface, and that these electric currents produce a scattered electromagnetic wave.

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However, NEC2 correctly computes *this same scattered electromagnetic field* using, as an intermediate step, fictitious magnetic sources rather than electric currents.

Thus, although the term physical sources is intended to include equivalent fictitious sources that are well known to produce a physical effect, this term does not include sources do not produce a physical effect. Furthermore, when terms such as an electromagnetic field are used, their meaning is not broadened beyond their standard meaning. For example, NEC2 computes a scattered electromagnetic wave produced an electromagnetic wave incident on a surface even though it internally uses a fictitious source. This is the same scattered electromagnetic wave that is computed by other computer programs that internally use electric currents.

To summarize, the term physical sources includes only sources that produce a physical effect, while some sources that produce a physical effect are not readily identifiable with actual physical sources.

Response to Rejection of Claims 2-8, 15-16, and 25 Under 35 U.S.C. 112 Second Paragraph

Claims 2-8, 15-16, and 25 have been cancelled.

Response to Rejection of Claims 2-8, 15-16, and 25 Under 35 U.S.C. 103

Claims 2-8, 15-16, and 25 have been cancelled.

Response to Rejection of Claims 2-39 Under 35 U.S.C. 101

In the Office Action of September 8, 2008 the Examiner rejected Claims 2-39 under 35 U.S.C. 101 because the invention disclosed in the claims is directed to non-statutory subject matter. Claims 2-8, 15-16, and 25 have been canceled. Claims 9-14, 17-24 26 and 30-44 are directed to statutory subject matter.

In this Office Action the Examiner states (Page 5, lines 3-5) "Therefore, the claimed subject matter is directed to manipulation of abstract ideas including those fictitious sources (e.g. a number, a formula, expression, etc.,) and or the effects of those fictitious sources. In other words, the claimed subject matter is so broad such that it does not provide or require a practical application." However, as described above, the term physical sources only includes sources that produce a real physical effect. For example, the well known electromagnetic simulation computer program NEC2 uses magnetic sources in an intermediate step, when computing actual

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electromagnetic waves. Although these sources may not actually be present, their use in computing actual electromagnetic waves is described in numerous books and in the documentation of the computer program NEC2. Thus, all of the claims describe computing a real physical effect.

Thus, Applicant asserts that all of the claims produce a Useful, Concrete and Tangible result. Furthermore, the judicial exception or abstract idea involved is confined within a method for producing new sources. Several practical applications of this judicial exception are recited within the claims. A first application is the use of these new sources for data compression. A second application is the use of the compressed data on a computer. A third application is the efficient computations recited in these claims using this compressed data. A fourth application is the application to the computation of certain physical effects as recited in the claims. The judicial exception, which is contained within a method for producing new sources, is not preempted by any of the claims. For example, this method could produce new sources that describe information flow in an organization, which would not preempt any of the first through fourth application described above.

Although the Useful, Concrete and Tangible and non-preemption tests are satisfied, this is not required post *Bilski*, which presented the machine or transformation test. The transformation test is satisfied since electronic data representing real physical effects is transformed. Also the machine test is satisfied since a machine is intrinsically used and that machine processes data representing real physical effects.

Applicant asserts that Claims 9-14, 17-24, 26 and 30-44 are directed to statutory subject matter and allowable over the prior art. Accordingly, Applicant respectfully requests allowance of Claims 9-14, 17-24, 26 and 30-44.

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Summary

Applicant respectfully assert that Claims 9-14, 17-24, 26 and 30-44 are allowable over the prior art, and Applicant request allowance of Claims 9-14, 17-24, 26 and 30-44. If there are any remaining issues that can be resolved by a telephone conference, the Examiner is invited to call the undersigned attorney at (949) 721-6305 or at the number listed below.

Respectfully submitted,

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